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PROCEEDINGS OF REGIONAL RESEARCH CONFERENCE IN AGRICULTURAL EDUCATION (NEW BRUNSWICK, NEW JERSEY, NOVEMBER 9-11, 1966).

RUTGERS, THE STATE UNIV., NEW BRUNSWICK, N.J.

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SEVENTY-EIGHT EDUCATORS FROM 13 NORTHEASTERN STATES AND WASHINGTON, D.C. PARTICIPATED IN THE 3-DAY CONFERENCE FOCUSED ON TOPICS OF INTEREST TO BOTH STATE SUPERVISORS AND TEACHER EDUCATORS. MAJOR SPEECHES WERE (1) "A REVIEW OF RESEARCH IN AGRICULTURAL EDUCATION IN THE NORTH ATLANTIC REGION" BY G.M. LOVE, (2) "REVIEW AND SYNTHESIS OF VOCATIONAL EDUCATION RESEARCH " BY C.J. SCHAEFER, (3) "A SHIFT IN EMPHASIS OF EXPERIMENT STATION RESEARCH" BY W.A. MACLINN, (4) "THE TEACHER AND THE PSYCHOLOGY OF THE CULTURALLY DEPRIVED" BY B.W. TUCKMAN, AND (5) "THE STRUCTURES, GOALS, AND ACTIVITIES OF THE NEW YORK RESEARCH COORDINATING UNIT" BY P.T. HARKNESS. BRIEF REPORTS ON THE NEW JERSEY, PENNSYLVANIA, AND CONNECTICUT RESEARCH COORDINATING UNITS ARE ALSO PRESENTED. STUDIES REPORTED WERE "ARTICULATION OF HIGH SCHOOL AND TECHNICAL COLLEGE CURRICULUMS IN AGRICULTURE," AND "A STUDY OF THE INNOVATIVE ASPECTS OF EMERGING OFF-FARM AGRICULTURAL PROGRAMS AT THE SECONDARY LEVEL AND THE ARTICULATION OF SUCH PROGRAMS WITH TECHNICAL COLLEGE CURRICULUM IN AGRICULTURE." OTHER REPORTS CONCERNED IMPLEMENTATION OF STATE OCCUPATIONAL STUDIES IN MASSACHUSETTS AND PENNSYLVANIA AND AGRICULTURAL EDUCATION AT THE SECONDARY LEVEL IN NEW YORK. MINUTES OF THE BUSINESS MEETINGS OF THE CONFERENCE ARE INCLUDED. (JM)

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PROCEEDINGS
REGIONAL RESEARCH CONFERENCE
IN
AGRICULTURAL EDUCATION

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THE DEPARTMENT OF
VOCATIONAL - TECHNICAL EDUCATION
GRADUATE SCHOOL OF EDUCATION
RUTGERS - THE STATE UNIVERSITY

PREFACE

This publication reports significant speeches, current research activities, and minutes of business meetings held during the 1966 Regional Research Conference in Agricultural Education.

Proceedings should be an accurate record of things said and done. Notes from group discussions and informal presentations were reported sparingly because of misinterpretation of information apt to result. Then, too, it was not economically feasible to report completely all conference activities. Papers written for discussion purposes only, teaching materials reviewed as a part of research in progress, and research proposals developed for funding or graduate study were not recorded for reasons which are obvious.

The minutes of the conference are reported in the order they happened. A report of each session precedes the papers, progress reports and notes of that session.

Charles C. Drawbaugh
Conference Chairman

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PROCEEDINGS OF REGIONAL RESEARCH CONFERENCE
IN
AGRICULTURAL EDUCATION

November 9, 10, 11, 1966

Report of the Wednesday Afternoon Session

The Conference was called to order at the Labor Education Center, Rutgers - The State University by the Session Chairman Dr. V. Ray Cardozier, University of Maryland. Dr. Cardozier introduced the Session Secretary, Mr. Daniel Adickes, Rutgers - The State University.

Dr. Charles C. Drawbaugh introduced Dr. Donald H. Amick, Assistant Dean, Graduate School of Education, who welcomed the Conference participants to Rutgers - The State University.

Dr. Drawbaugh added his welcome to that of the Assistant Dean. He then provided the group with an overview of the program set up by the program planning committee for the three days. Those on the program planning committee were Dr. Joe P. Bail, New York; Dr. Ralph Barwick, Delaware; Dr. Charles C. Drawbaugh, New Jersey; Mr. George W. Lange, New Jersey; Dr. Gene M. Love, Pennsylvania; Mr. Jesse Taft, Massachusetts; Mr. T. Dean Witmer, Pennsylvania; and Ex Officio Member Dr. Carl J. Schaefer, New Jersey.

Dr. Gene M. Love, The Pennsylvania State University, presented the paper, "Review and Synthesis of Research in Agricultural Education in the North Atlantic Region." The edited paper is a part of this section of the Proceedings.

"Review and Synthesis of Vocational Education Research," was the topic of a paper presented by Dr. Carl J. Schaefer, Rutgers - The State University. Dr. Schaefer discussed research in vocational education outside of vocational agriculture. His paper is also included in this section of the Proceedings.

Following a break in the program, the topic, "Implementation of State Occupational Studies," was presented. Dr. W. Howard Martin, University of Connecticut; Dr. Philip Edgecomb, University of Massachusetts; Dr. Joe P. Bail, Cornell University; and Dr. David R. McClay, The Pennsylvania State University; each discussed the follow-up in their own state. The individual presentations are a part of this section of the Proceedings.

Reactions to the Wednesday Afternoon program were presented by Dr. Otto P. Legg, Office of Education; Dr. James W. Hensel, Ohio State University; Mr. T. Dean Witmer, Department of Public Instruction, Pennsylvania; and Mr. Frank J. Wolff, Department of Education, New York.

The meeting was adjourned at 5 p.m.

A Review of Research in Agricultural Education in the North Atlantic Region

Gene M. Love, Associate Professor
Department of Agricultural Education
The Pennsylvania State University
November 8, 1966

"Much of what we (vocational researchers) have done has been narrow, insignificant, and amateurish," writes Dr. H. M. Hamlin, Professor Emeritus, University of Illinois, in the September issue of the AVA Journal. Coming from a man who has devoted his whole life to vocational education and who has directed many research projects, the statement is worthy of careful study. Does Dr. Hamlin's criticism apply to the research we do in the North Atlantic Region? Are we narrow and amateurish? Is much of our research insignificant? Regardless of whether or not we agree or disagree with Dr. Hamlin, it may be best that we take him seriously. We could benefit from a frank and honest analysis of our research efforts.

My analysis of research in the North Atlantic Region attempts first, to summarize studies completed in Agricultural Education during the past three years and second, to evaluate the quality of the problems, methods, and statistical techniques used. It is difficult to evaluate descriptive data without making personal judgments. Realizing the hazards of making personal judgments of the research of others, I apologize if my comments should be offensive to members of the conference.

I have summarized 103 studies completed and reported in Abstracts of Research Studies in Agricultural Education in the North Atlantic Region, 1964-1966. The data were classified by certain qualitative characteristics and frequency counts made and percentages calculated. Although both the data and the statistical analysis are inadequate in some respects, they do offer some good indications of what we have done and what we might do to improve the direction of research in our region.

The number and percent of studies completed in the North Atlantic Region during the past three years, by states and by type of study are summarized in Table 1.

TABLE 1. Number and Percent of Studies Completed in the North Atlantic Region by States and by Type of Study.

		Type of Study		
State	Staff	Doctoral	Masters	Total
Pennsylvania	6	11	18	35 (34%)
New York	3	10	15	28 (27%)
Maryland	2	0	17	19 (18%)
West Virginia	0	0	16	16 (16%)
Rhode Island	0	0	2	2 (2%)
Delaware	1	0	0	1 (1%)
Massachusetts	1	0	0	1 (1%)
New Jersey	0	0	1	1 (1%)
Total	13 (13%)	21 (20%)	69 (67%)	103 (100%)

Four states reported completed research studies for the first time in a number of years. They were Rhode Island, Delaware, Massachusetts, and New Jersey. Sixty-seven percent of the studies reported were masters degree theses, papers, and essays; twenty percent were doctoral degree theses; only thirteen percent were staff studies. There was an increase in masters degree studies reported from Maryland during 1966 due to the fact that Agricultural Extension studies were reported for the first time. There was a decrease in masters degree studies reported in New York during 1966.

TABLE 2. Frequency and Percent of Research Studies Completed in the North Atlantic Region by Problem Area and by State, 1964-1966.

	Problem Areas				
State	Guidance No. & Percent	Administration No. & Percent	Tea. Methods No. & Percent	Adult Edu. No. & Percent	Total No.
Pennsylvania	17(49)	4(11)	10(29)	4(11)	35
New York	12(43)	10(36)	4(14)	2(7)	28
Maryland	3(16)	11(58)	4(21)	1(5)	19
West Virginia	5(31)	6(38)	1(6)	4(25)	16
Rhode Island	2(100)	---	---	---	2
Delaware	1(100)	---	---	---	1
Massachusetts	1(100)	---	---	---	1
New Jersey	1(100)	---	---	---	1
Total	42(41)	31(30)	19(18)	11(11)	103

The frequency and percent of studies by state and by problem area are reported in Table 2.

All studies were classified into four major categories - guidance, administration, teaching methods, and adult education. Guidance studies have been popular each year in every state. Administration was the second most popular problem area followed by teaching methods and adult education. The rash of state occupations studies in recent years explains the popularity of guidance studies. Administrative studies have attracted new attention because of our efforts to define and to outline new programs. A substantial number of teaching methods studies are in progress and will no doubt contribute to an increase in this category during the next several years. Adult education received only token interest as an area of research.

Among the 42 guidance studies, there were 29 studies of occupational requirements, opportunities and choice; five studies of student characteristics; three studies of curriculum choice; three follow-up studies of former graduates; and two studies of variables associated with success in college courses.

Thirty-one studies were administrative. Fifteen of these were designed to develop and/or evaluate programs and courses of study; seven were role perception studies; six investigated FFA and 4-H problems; two studied teacher characteristics; and one developed an affidavit for reporting programs.

Nineteen studies dealt with teaching methods. Problems investigated, including numbers, were programed instruction (6), factors associated with teaching success (4), development of instructional units (3), curriculum development (2), learning orientations (2), team teaching (1), hunting safety (1), and methods of inservice education (1).

Finally, eleven of the 103 studies pertained to adult education. Six studies were aimed at defining improved production practices and techniques, and five concerned the development of improved adult programs.

Table 3 summarizes the studies by method and by type of study. Forty-nine studies, representing 47 percent of the total, used the survey method. Among this number, were 27 (26%) unsampled surveys and 22 (21%) sampling surveys. Forty studies (39%) were causal-comparative, eight (8%) were experimental and six (6%) were pre-experimental. The causal-comparative method was the most popular single method used. Maryland reported 16 studies using this method.

The frequency of use of major statistical techniques, by states is reported in Table 4. Although a frequency distribution leaves something to be desired in this evaluation, the results do indicate a heavy dependence on non-parametric statistical techniques, especially numbers and percentages. The fact that 14 abstracts indicated no statistical techniques is worthy of noting.

TABLE 3. Frequency and Percent of Research Studies Completed in Agricultural Education in the North Atlantic Region, by Type of Research and by Method of Research, 1964-1966.

	Type of Research				
Method of Research	Staff	Doctoral	Masters	Total	
Experimental	4	2	2	8 (8%)	
Pre-experimental	0	0	6	6 (6%)	
Causal-comparative	2	13	25	40 (39%)	
Sampling survey	5	5	12	22 (21%)	)47%
Survey	0	1	26	27 (26%)	
TOTAL	11 (11%)	21 (20%)	71 (69%)	103 (100%)	

TABLE 4. Frequency of Use of Selected Statistical Techniques in Research Studies Completed in the North Atlantic Region, 1964-1966, by States.

Statistical Technique	Penna.	N. Y.	Md.	W. Va.	Others	Total
Parametric Statistics						
Analysis of covariance	7	0	0	0	0	7
Analysis of variance	2	1	4	0	0	7
t-test	7	4	5	0	0	16
Correlation and Regression	7	4	3	1	0	15
Multiple regression	1	0	0	0	0	1
Discriminant Analysis	2	0	0	0	0	2
Factor Analysis	3	0	0	0	0	3
Item Analysis	0	1	0	0	0	1
Z-test	0	0	1	0	0	1
Standard deviation	0	2	0	0	0	2
Means	4	3	1	3	0	11

If you have never enjoyed the privilege of editing abstracts of research studies completed in Agricultural Education in our region it may be difficult for you to appreciate the fact that some of our problems are not well defined. Some researchers (largely masters degree recipients but not always) have not delimited the questions they have investigated. There seems to be no direction to the reasoning behind the questions some of us propose and answer. Could much of the problem be corrected by requiring all graduate students to carefully outline their problems in detail before permitting them to enter the data collecting stage of their study? Or, is the quality of our research acceptable as it is?

Another old but reliable friend of the researcher in the definition of a problem is cooperation. Cooperative research efforts which bring together two or more staff members (and graduate students) from an institution or from different institutions frequently produce good results. The researcher who thinks he can work completely independently of his colleagues is naive. Our best research takes place when we get researchers together to plan and do research. I will be very much surprised if this conference does not produce the foundation for some new significant research. At the Maryland conference two years ago the groundwork was laid for the curriculum materials project called Project DIMENSION. It also produced, I believe, the New York-New Hampshire Interstate Project in Evaluation of Secondary Programs in Vocational Ornamental Horticulture.

Would oral examinations for masters degree candidates help solve the problem of poorly defined problems? At least two masters degree recipients during the past year have suggested the idea to me. It could prove to be the needed incentive for some graduate students.

On Improving Research Reporting

The capacity to report research findings clearly and accurately is a good indication of a researcher's ability. Frankly, I am appalled with the quality of some of the abstracts of research studies in our field. If you doubt my opinion let me send you some of the unedited abstracts I received last year to be included in the next Summaries Studies in Agricultural Education bulletin. Quoted below are a few of the errors found in the abstracts. Some came from staff studies.

> "50% received post-high school education."
> "A concentrated review of literature was made."
> "These meetings were offered by a survey to determine what areas of instruction were covered by teachers."
> "The average teacher had three graduates or 42.86 percent of the students who graduated placed in farming to follow-up."
> "When students from the same country lived in apartments together they had less academic success. Men students had greater success than women."
> "A correlation of 9.87290 was obtained for. . ."

TABLE 4. (Continued)

Statistical Technique	Penna.	N. Y.	Md.	W. Va.	Others	Total
Non-parametric statistics						
Chi Square	0	3	8	1	0	12
Rank order coefficients	0	0	1	0	0	1
Median and mode	0	2	0	0	0	2
Percentage and percentile	19	12	2	5	3	41
Rank order	0	2	1	1	1	5
Frequency counts	21	12	4	9	3	49
No Statistics Indicated	4	4	0	5	1	14

The facts which describe research in Agricultural Education in our region appear to support Dr. Hamlin's criticisms. We investigate a wide range of problems. Our interests are not stereotyped. Nevertheless, much of what we have done has lacked a professionally acceptable theoretical framework. Our methods and selection of statistical techniques indicate this fact. It is especially true of many masters degree studies. We have not placed sufficient emphasis on the formulation of hypotheses (questions), the testing of which would contribute new information to the profession. This is not to diminish the educational significance of certain vehicles of research. For example, the instructional materials developed in a teaching methods study are positive outcomes but they do not contribute directly to our understanding of the teaching-learning processes. The development of effective pilot programs is another example of educational progress which we must continue to encourage; but which is not research. It is, however, a vehicle for research.

The nature of titles of studies suggests that more large, long-range studies could be planned by staff members and completed in parts by interested graduate students. The procedure makes possible additional (and probably better) staff research with a minimum amount of work while improving the research competence of the student and providing him with an acceptable research problem. A desired feature of long-range research projects is that they are usually multivariate but in terms of the independent and dependent variable, thus, yielding more findings. The findings are also more likely to be significant new contributions. Some staff members have already taken advantage of the long-range research idea in the development and execution of state occupations studies.

Does the research we do in Agricultural Education lack boldness and innovation? Again, a review of study titles seems to indicate that it does. The problems investigated in 1964-66 are not largely different from what we studied in 1960-62 or in 1962-64. Our researchers have been quite busy but what we have done hardly qualifies as bold and inventive. We need to generate some new ideas or resurrect some old ones. There is, in my opinion, an urgent need for a high school course for future homeowners. Students need to be taught how to deal with the problems of homeowners, many of which are agricultural. I see no reason why such a program could not be developed employing team-teaching methods and studied in a long-range research investigation. Of course, it wouldn't be a vocational education course. It would take a bold vocational researcher with considerable imagination to undertake such a project.

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None of these examples illustrates the very common failure of researchers to note the source of differences observed in multiple - classification statistical analyses and the direction of association in tests of relationship. Few things can be more disconcerting to a reader than findings which do not indicate which treatment was different and how it differed.

If my judgment about our research reporting is correct, it should be of particular concern to the members of this conference. We have entered a new era of research. Agricultural education is no longer isolated from other divisions of vocational education. It is no longer isolated from other fields of education. The National Vocational Education Act of 1963 and other legislation has brought together researchers from many disciplines. Although federal research dollars have been relatively easy to come by during the past three years, the day is near at hand when we will begin to understand and appreciate the value of careful and accurate research reporting. Our research will be reported in journals with other researchers.

If we do not compare favorably, our chances for attracting research funds in the future are impaired.

I doubt if any person in this room would not agree that the status of research in Agricultural Education is similar to that of the football coach who has an inexperienced team and is faced with a rugged ten-game schedule. We are in a period of heavy research activity.

Even a poorly prepared research project has a chance to be approved. Young, inexperienced researchers are being hired to conduct and in some cases direct research. But, sooner or later we must defend our work. We must vouch for every dollar we spend.

May I say that I think the quality of our young researchers is better than it has been at any time in our history. We are attracting some very intelligent and imaginative personnel to our field.

One final reference to Dr. Hamlin's remarks about the quality of our research. I am inclined to agree with him. Or, perhaps I should say, I am afraid to disagree with him. We have some significant new research in progress in our region. More is being planned. The number of doctoral and masters degree candidates has increased markedly.

The supply of experienced researchers and research advisers is already inadequate. To misjudge the magnitude of the problem would be a serious mistake. The only solution I see to the problem is greater specialization of our faculty. We are trying to do too many things at present. Consequently, we aren't getting the quality we desire in our work.

Fully qualified researchers are well read. They keep themselves informed of other research in their field, frequently corresponding with their fellow researchers. They attend the research meeting where such research is reported. They are members of graduate faculties. They write research articles regularly. How well we fit this description is a matter of opinion but it is a matter of concern.

I would like to propose to the conference the idea of a post-doctorate clinic for researchers in the North Atlantic Region. The problems of research design, analysis, and reporting would be given equal emphasis. The clinic could be offered in successive years to afford every researcher in our region the opportunity to attend.

REVIEW AND SYNTHESIS
OF
VOCATIONAL EDUCATION RESEARCH[1]

by

Carl J. Schaefer[2]

Just so there is no misunderstanding as to what I am reporting on, and to give credit where credit is due -- the bases of my review are three papers which in themselves make up a critical review in the research literature for the general field called industrial education. These papers, prepared for the Center for Research Leadership Development, the Ohio State University, will become part of their ERIC (Educational Retrieval Information Center) endeavor. They are authored by Jerry Streichler, Industrial Arts (1965); Milton Larson, Technical Education (1965); and Bruce Tuckman and myself (1965), Trade and Industrial Education. Each of these reviews independently assesses the status of the art in research and goes back about five years. And, it might be added, that the definition of research has been one of the broadest possible connotations.

Having cleared this point, it appears appropriate to begin forthright with a statement relative to the research posture of industrial education -- the areas of industrial arts, trade and industrial and technical education making up this field.

If I had to make a short definitive statement without further clarification, but which I will choose to further clarify, I would say, "the hard cold facts indicate the effort has been one of too little - too late." The posture, then, is one of some concern if not outright urgency. And I suppose I need not remind you that posture can only be changed by the flexing of the muscles, a physical therapy, an extension of effort over and beyond that which is required and meaningful exercise as to strengthening the weakness, and for that matter, the very backbone to stand upright in a defiant and confident position. This we do not have even when the total effort is pooled. I hope this becomes obvious to you as I relate the actuality of the research picture in industrial education.

Philosophical Bases. -- In order to move forward, indeed to make progress, action must stem from some philosophical basis. To doubt that the Vocational Education Act of 1963 has not provided vocational education with a new springboard for action would be to ignore the obvious. Studies of a philosophical nature, nevertheless, have been meager and diverse. There is still no clear concensus as to the most significant contribution that can be made by the area of industrial arts. It is a commonplace that there is disagreement within the ranks of industrial arts educators concerning aims and objectives. Hammond (1956), for example, found a diversity of aims and purposes in the field, and he noted the objectives of general education were becoming less distinguishable from those of trade and industrial education. He further noted that this did not contribute to the stability within the previously subscribed to general shop theory.

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[1] Paper presented at the Regional Research Conference in Agricultural Education, Rutgers - The State University, November 9, 1966.

[2] Dr. Schaefer is Professor and Chairman of the Department of Vocational-Technical Education, Rutgers University.

Similar confusion permeates the philosophical ranks of trade and industrial educators. Flexibility seems to be the resounding note and Righthand (1965) and others strike a chord for "generalizability." Technical education appears to have strengthened their philosophical bases as a result of greater emphasis on automation and instrumentation. The concept of the engineering team has served to clarify the objectives of technical education and Emerson (1959) and others have given direction to technical education at the community college and technical institute levels.

Manpower Employment Opportunities. -- Research in the field of manpower and employment opportunities, at least for the total area of industrial education, appears to cause extensive frustration. The effort has been not only spasmodic, but the method of attack as well as who should assume major responsibility remains vague. For example, vocational educators are torn between the "bread and butter" type manpower studies which clearly relate to local needs and program offerings. But the trend is for more regional, state and national type data being fed us by the research arms of the Bureau of Labor Statistics, and other agencies related to the Department of Labor. A highlight in the manpower type endeavor has been the apparent recognition by those in the field of industrial arts education that they need not be concerned in their research efforts in making such investigations. This very fact may make a significant contribution to the clarification of their philosophical bases.

Curriculum Development and Educational Programs. -- The diversity of philosophy, clouding the industrial arts offering, is reflected in a similar way in curricula development. Industrial arts studies such as Schmitt, Harrison and Piley (1961) found through analysis of states' curriculum guides that their contents are concerned with hand tools and in operation of machines. Moreover, the guides reflect little agreement among the states as to what should be taught. An industrial arts curriculum project which does seem to have merit is being conducted at The Ohio State University (Towers et. al., 1966). The supporting rationale for the project suggests that there is an area of man's knowledge into which the study of industry apparently fits. Industry is thus reviewed as one facet of the major economic institution of society and through this point they feel (meaning the researchers) that discreet content can be extracted and derived for a new industrial arts curriculum.

Olivo (1964), on the other hand, recommends that the whole field of industrial education curricula be built along five dimensions. The first is vertical coordination, and is similar to the cluster concept of Maley and Frantz. Common elements of a family of occupations form the basis for the curriculum. The second, horizontal articulation, provides for the identification of common related elements across the disciplines of the total educational program. The third dimension incorporates a manpower approach -- is there employment to be found in the occupation; the fourth and fifth encourages experimentation to gain perspective on the future.

Regarding curriculum development for technical education, a study by Bodine (1959) stemmed from an analysis of twenty-three selected manufacturing and processing firms. In technical education the analysis approach seems to be paramount for ascertaining curriculum content.

Whereas, curriculum development deals mainly with discreet course content, studies of programs of industrial education have been concerned more with the attainment of overall objectives, availability of offerings, and administration and supervision. Regards to vocational-technical education programs as a whole, Weaver (1964) took a survey among sophomore and junior high school students in Ohio and found that over 50% desired vocational training, while 25% showed interest in both college preparatory and vocational programs. Only 13% were totally disinterested in vocational programs. Yet at the time of the Weaver study, there existed far fewer opportunities to pursue the vocational program in Ohio's schools than interest shown. Korazzini (1966) makes a case through cost benefit analysis that the objectives of vocational education can be more reasonably attained by the individual in high school rather than post high school programs. Loss of income based on foregone earnings while the individual pursues a post high school program is not regained for at least fifteen years, if ever, since high school graduates often earn as much as graduates of post high school programs.

To summarize at this point, to a major degree industrial education research appears to be too much preoccupied with the question of, "where vocational education should be taught," at the expense of studying "what should be taught," and "how it should be taught."

Instructional Materials and Devices. -- In the category of instructional materials and devices little seems to have been accomplished. In other words we are not on sure ground relative to the effectiveness of teaching machines, programmed instruction, teaching by television, and even in the use of assignment sheets. Much has been done, especially since World War II to ascertain the validity and reliability of psychological testing. Yet little attention has been given to comparable kinds of validity of instructional materials and devices -- even those produced by some of our outstanding instructional materials laboratories located at major institutions. Folley (1961) outlines a procedure for systematically designing performance aids in four steps: 1) identifying task elements for which aids are needed, 2) determining the functional characteristics of aids for these task elements, 3) specifying the physical design characteristics of the aids, and 4) evaluating, modifying, and updating the aids.

Learning Processes and Teaching Methods. -- Probably one of the most neglected areas of research in the field of industrial education has been in the area of learning processes and teaching methodology. Whereas, this alone should be paramount when thought of in relation to experimental designs resulting in concrete fact finding. I will not belabor the point, but as Campbell and Stanley (Gage, 1963) put it, the use of experimental science in educational problem solving does not supplant traditional wisdom, but augments it. The lack of vocational researchers who are thoroughly schooled in the experimental approach has been one of the main problems. Even more acute is the hesitancy on the part of vocational education policy makers to endorse financially and philosophically the experimental approach to problem solving. Hesitation has been based on the undisputed knowledge that experimentation is a slow, laborious process that results more often than not in disappointing progress and in many more wrong responses (of a valid nature) than correct ones. Nevertheless, experimentation (in its true meaning) must be recognized as the only approach to the accumulation of a body of valid knowledge on which to base major decision making. This we have not really taken to heart and far too frequently we lack competency to carry on such research. Moss (1960), Rowlett (1964), Suess (1965) and others have used experimental designs to delve into the problem of direct - detailed versus direct - discovery method of instruction, but with conflicting results. The changing of attitudes too has provided the basis for limited research utilizing appropriate experimental designs. With the result -- we seem to know little as to how both students' and teachers' attitudes can be reshaped.

Student Selection and Follow-up. -- The last area I want to cover in some detail, deals with that of student selection and follow-up. The hallowed grounds by which vocational students are frequently rejected -- that being, too many applicants for the openings within the class, must give way to more definitive means. Although the foregoing statement carries a note of cynicism, it is not entirely without foundation when we find (at least in some instances) that 75% of the applicants are turned away from our vocational offerings while comprehensive high schools are required to admit all who apply. If one is looking for differential testing for student selection for industrial education subjects, it seems the field is wide open. The closest we have come to this type of study will be found in the factoring of the General Aptitude Test Battery (GATB) of the U.S. Department of Labor. Moss (1965) sums up a review of fourteen studies in this area with the following statement:

> "The problem of increasingly effectiveness of prediction is multiplied by the diversity among curricula with the same occupational objective, and by rapid changes in course content within each institution; it is further complicated by the necessity to cross validate results -- a procedure so far neglected by most of our researchers -- and to employ larger samples." (p.9).

Along a similar line as student selection the problem of potential school drop-out plagues us. Walsh (1965) found that the most practical and effective index for identifying of potential drop-outs was a combination of grade point average in the lower quarter of the class and lack of participation in extra curricular activities.

Certainly the area of placement and follow-up should be of interest. Much more needs to be accomplished here, but to give you an idea of what can be accomplished, Zanzalari (1960) found that of the 1958 graduates of vocational and technical high schools in New Jersey, 80% were placed in related occupations. He also reported (1960) that the typical shop teacher is willing to cooperate with the placement counselor in order that the objectives of a vocational education be obtained by the student. This is further corroborated by the recent AIR Study (Eninger, 1965) which found that placement of vocational high school graduates was slightly quicker and more likely to be in the trade for which they were trained than graduates of comprehensive high school vocational programs.

I believe without proceeding any further we now have a sense of what is being done in industrial education research. If time permitted we could continue this discourse on the meager attempt in the area of teacher education, administration and supervision, and, of course, the whole field of evaluation. This latter is especially important in light of the "end product" being turned out by industrial arts, trade and industrial education and technical education. Weaknesses in methodology and resistance to place the graduates of these offerings under a microscopic examination leaves many questions as to whether or not we are indeed achieving our expressed educational goals and objectives.

In closing, let me quote from Eddy (1963) who spoke as the "spirit of vocational education":

> . . . Reject not the principles of the prophets which serve well over the years, but recognize that the limited practices of yester-years are not sufficient unto this day. Change cometh of swift feet, and is always at hand . . . Widen your vision. Be alert, that new needs will be recognized, and become flexible that they be satisfied. . . For it is in meeting the needs of man, fashioned by the opportunities of the day and those to come, that the general welfare, the defense of the nation, and sound economy, and stable social institutions are maintained. . . Be also concerned about an organization for the work. But think not that one plan must overshadow all the others. . . Search yourself diligently lest you continue to neglect the hosts of men who have not been served well in the past . . . Be not afraid to investigate all matters that Truth will be known. Experimentation and research are the mightiest of the tools for this endeavor. . . (p. 19, 20).

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IMPLEMENTATION OF STATE OCCUPATIONAL STUDIES IN MASSACHUSETTS

by

Dr. Philip Edgecomb

On the basis of employment opportunities, the Judge Study[1] indicated that the three most important instructional areas in off-farm agricultural occupations are in the areas of (1) ornamental horticulture, (2) agricultural mechanics (hardware and farm equipment) and (3) food processing and distribution. Employment opportunities in conservation are also increasing each year.

Recent program changes in vocational agriculture in the 14 high school departments and three county agricultural schools are summarized as follows:

I. Ornamental Horticulture

a. Silver Lake Regional High School (new greenhouse -1965)
b. Charlton High School (new greenhouse - 1966)
c. Narragansett Regional High School (new greenhouse - 1966)
d. New Salem Vocational School (new greenhouse - 1966)
e. Burncoat Sr. High School (Worcester) (new greenhouse - planning)
f. Wachusett Regional High School (new greenhouse - planning)
g. Smith's Vocational High School (new greenhouse - planning)

--- All three county agricultural schools and Barnstable Vocational High School had greenhouse facilities prior to this period.

II. Agricultural Mechanics

a. Norfolk County Agricultural High School - inclusion of Earth Moving course in 13th year Agricultural Mechanics program.
b. Silver Lake Regional High School - inclusion of earth moving unit in 12th year Agricultural Mechanics program.
c. Essex Agricultural and Technical Institute - inclusion of helioarc welding in agricultural mechanics next year (important for the welding of irrigation equipment.)

III. Food Processing and Distribution

a. Essex Agricultural & Technical Institute - Distributive Education program is in operation. Food Processing program is scheduled to start in 1968 (building is in planning stage.)
b. Jamaica Plain High School - Vocational Agriculture students can elect Distributive Education courses.

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[1] Judge, Homer V. Employment Opportunities and Needed Competencies in Off-Farm Agricultural Occupations in Massachusetts. Massachusetts Department of Education, Bureau of Vocational Education, June, 1965.

IV. Conservation

a. Specialized programs in each of the three county schools.
b. Included as part of the vocational agriculture program at:

    (1) Narragansett Regional High School
    (2) New Salem Academy
    (3) Burncoat Senior High School
    (4) Silver Lake Regional High School

A BRIEF RESUME OF AGRICULTURAL EDUCATION AT THE SECONDARY LEVEL IN NEW YORK STATE 1964-1966

by

Dr. Joe P. Bail

1. No. of schools served by agricultural departments:

1966 - 366
1965 - 340
1964 - 270

2. No. of teachers of agriculture:

1966 - 281
1965 - 258
1964 - 247

3. Enrollment in agricultural education:

	1966 (est.)	1965	1964
Agr. 7 and 8	2300	2300 (app.)	2500 (app.)
Agr. 1 and 2	4400	4314	4792
Agricultural Business	200	144	7
Agricultural Mechanization	400	211	28
Conservation	200	123	28
Farm Production and Management	3400	3539	3843
Ornamental Horticulture	700	340	259
General Agriculture	350	452	300
Young Farmer Program	2400	2400	2300
Total (approx.)	14,350	13,823	14,057

4. No. and type of major specialized offerings: (including both local and area schools)

	1966	1965	1964
Agricultural Business	16	12	1
Agricultural Mechanization	30	9	2
Conservation	20	9	2
Farm Production and Management	224	227	NA
Ornamental Horticulture	30	13	6
Young Farmer	72	69	70

(Totals do not equal number of schools since some schools have more than one program.)

5. Follow-up study, agricultural graduates 1963-1965: (approximately 1600 graduates per year who completed 3 or 4 years of agriculture)

In farming - 26%
Non-farm agricultural occupations - 10%

Continuing formal education - 29%
(including 2 and 4 year colleges, but not young farmer program)
In Armed Forces - 14%
Employed but not in fields related to agriculture - 20%
Unemployed (6 months after graduation) - 1%

6. No. and source of new teachers:

	1966	1965	1964
No. new teachers	44	41	33
No. trained at Cornell	19	18	16
No. trained elsewhere	25	23	17
No. teachers returning to the field	7	5	4
Total teacher turnover	51	46	37

7. Salaries of teachers of agriculture, 1965-66: (based on reports from 247 of 258 total)

Range	No.
10,000 or over	35
8,000 to 9,999	124
6,000 to 7,999	79
Under 6,000	9
Total	247

8. Major research completed and underway:

Completed

(a) A Study of Off-Farm Agricultural Occupations in New York State. Cushman, Christensen, and Bice. 1965. 95 pp.
(b) Educational Needs of Beginning Dairy Farmers in New York, 1963. Cornell Exp. Sta. Bulletin 1008, January 1966.

Underway

(a) Work Experience Programs in Agricultural Education. Prof.'s Cushman and Hill. U.S. Office of Education.
(b) Innovation and Articulation in Agricultural Curriculums at the High School and Post-High School Level. Prof. Bail and Mr. Hamilton. State Education Department of New York.
(c) Agricultural Occupations Complex. Prof.'s Drake and Tom. Hatch Exp. Sta. Project.

IMPLEMENTATION OF STATE OCCUPATIONAL STUDIES REPORT FOR PENNSYLVANIA

by

Dr. David R. McClay

Summary of Pennsylvania Survey

Generalizations that may be drawn from the findings are:

1. If persons to be hired during the next five years in off-farm agricultural occupations are to have some technical education in agriculture, each school teaching agriculture will have to provide 12 graduates for full-time employment and six graduates for part-time employment per year.

2. Employers expect about a 14 percent increase in the number of employees needing agricultural competencies in the next five years. This parallels the anticipated expansion in the total labor force.

3. Three occupational areas -- Agricultural Supplies and Equipment, Livestock, Dairy and Poultry Products, and Ornamental Horticulture -- account for 74 percent of the businesses, 73 percent of the current employees needing agricultural competencies, and 71 percent of the employees to be hired in the next five years. Of 163 job titles, 37 account for 75 percent of new employees, not including professional workers, in the next five years.

4. Agricultural competencies needed are mainly determined by the products handled by the business. Many of the agricultural subjects taught to students preparing for production farming also will be needed by students who enter off-farm agricultural occupations.

5. Salesmanship, human relations, and business management are competencies that are needed by all employees, but in varying degrees. There are many instances in which vocational agriculture may support, or be supported by, other vocational subjects taught.

Activities following State Survey

1. The Department is conducting a four-year project, "Development and Evaluation of Instructional Units in Ornamental Nursery, Floriculture, and Turf Occupations for High School Students and Adults in Northeastern United States." Financial support - P. L. 88-210, (4c), U.S. Office of Education.

2. The Department is conducting a two-year research project in, "The Development and Evaluation of Occupational Information in Agriculture." Financial support - P. L. 88-210, (4a), Department of Public Instruction, Harrisburg. Twenty-seven high school guidance counselors and 29 agriculture teachers are enrolled in two inservice courses with emphasis in identifying and training needed for agricultural occupations. Resource unit and teacher's guide prepared and being tested re agricultural occupations.

3. A two-year research project has been approved and about to get underway in, "Vocational-Technical Education in Agricultural Resources." Project will emphasize pilot programs for secondary school and adult groups of agricultural occupations in conservation, regulation, and recreational utilization of agricultural resources including forests and other natural areas, fish, wildlife, soil, water, and air. Financial support - P. L. 88-210, (4a), Department of Public Instruction, Harrisburg.

4. Obtained grant from Title I, Higher Education Act of 1965, To Conduct Pilot Programs in Agricultural Business Management Education. Courses are now being planned and will be offered in several schools during the first half of 1967.

5. Obtained grant from Title I, Higher Education Act of 1965, to conduct pilot programs in Land Management Education. Program is underway.

6. Obtained grant from Pennsylvania Farm Electrification Council to develop and test student resource manual and teacher's guide for the unit, "Automatic Controls in Farm Equipment, Machinery, and Home Appliances." We are starting the second year of the project.

7. Added staff position in farm cooperatives and agricultural business. This staff member is housed in the Department of Agricultural Education, is employed by both the Agricultural Economics Extension Service and the Department of Agricultural Education. The Pennsylvania Association of Farm Cooperatives gives financial support to this position.

8. In cooperation with teachers, area advisers, and state supervisory staff, prepared and disseminated course outlines for agricultural programs for area vocational-technical schools, including suggested buildings, facilities, and equipment needed.

9. Conducted one-week workshops each of the last three years on ways to modernize high school agricultural programs in meeting many of the educational needs for agricultural occupations in addition to agricultural production.

10. Conducted inservice courses for teachers which emphasized cooperative work experience procedures and practices.

11. Established many new agricultural programs in schools. These include: 7 horticulture, 1 turf, 1 agricultural mechanics, 1 agricultural resources, Buildings and Grounds Maintenance.

12. We hope all teachers have revised their courses of study and have included units of instruction which more nearly reflects training for the agricultural occupations identified in the state survey.

13. Courses offered by the Department for undergraduates and graduates have been revised and reflect the changes recommended for agricultural education by P. L. 88-210.

14. We are in the process of adding to our teacher education staff specialists in each of the four areas:

    Agricultural Business and Management
    Agricultural Mechanics
    Plant and Soil Science
    Animal Science and Food Technology

THINGS WE MUST DO

1. Determine the number of employment opportunities at the entry level in agricultural production.

2. Give more help to teachers in modernizing their courses of study.

3. Provide inservice courses for teachers in depth in the "new" agricultural subject matter areas.

4. Prepare and provide teachers instructional units in the "new" agricultural subject matter areas.

5. Prepare an adequate number of teachers with thorough preparation in the "new" agricultural subject matter areas.

REACTIONS TO IMPLEMENTATION OF STATE OCCUPATIONAL STUDIES

Dr. Otto P. Legg

1. Think about lending assistance to health occupations research.
2. There is a need for a sense of direction - who will set the priorities and prepare guidelines for research? We can do it or permit others to do it for us.
3. Research has changed from exciting new ideas to themes.
4. Better programming is a necessity and there is a need to define terminology better.

Dr. James Hensel

1. One of the benefits of Regional Research Conferences is the sharing of ideas.
2. A greater cooperation between vocational agricultural and distributive education personnel is encouraged.
3. Teacher training programs in agricultural education should be reexamined. Is supervised farming needed in all states? What about cooperative occupational experience programs?

Mr. T. Dean Witmer

1. What is the responsibility of the agricultural researcher to the adult farmer programs?
2. One of the big problems is the shortage of competent, dedicated teachers of agriculture.

Mr. Frank Wolff

1. Distributive education coordinators and vocational agriculture teachers cooperate freely when the need arises in New York.
2. At present there are 20 vocational conservation programs in the State and we are still expanding. We do not know all of the needs yet.
3. The horticulture program in Warsaw County provides for eight occupational training objectives. It is a non-graded program with students placed for occupational experience.

REPORT OF THE WEDNESDAY EVENING DINNER SESSION

A reception and dinner meeting sponsored by Sears-Roebuck Foundation was held in the Winchester Room of the Brunswick Inn. Sixty-three Conference participants attended the dinner meeting.

The Master of Ceremonies for the occasion was Dr. Charles C. Drawbaugh.

Following the introduction of special guests, Mr. Robert Buzbee introduced Mr. Gene Gister, Manager of the New Brunswick store. Mr. Buzbee noted the close relationship between Sears-Roebuck and vocational agricultural educators over the many years. He said that he hoped that the fine relationship would continue in the years ahead.

Mr. William H. Evans, Professor Emeritus, Rutgers - The State University, saluted Mr. Ray Kienzle, teacher of vocational agriculture in New Jersey.

The address of the evening was delivered by Dr. Walter A. Maclinn, Director, New Jersey Agricultural Experiment Station. Dr. Maclinn spoke on the topic, "Shift in Emphasis in Experiment Station Research." The paper is a part of this section of the Proceedings.

Mr. Jesse A. Taft, Office of Education, Boston, Massachusetts, thanked the host for sponsoring the special reception and dinner.

The dinner meeting was adjourned.

A SHIFT IN EMPHASIS OF EXPERIMENT STATION RESEARCH?

Statement presented to the Regional Research Conference in Agricultural Education at Rutgers - The State University, November 9, 1966, by Walter A. Maclinn, Director, New Jersey Agricultural Experiment Station.

Agricultural Experiment Stations were established in 1880 by the Federal government and their purpose, in essence, was the same as that for this Station which was established eight years prior by the State of New Jersey, namely: "for the benefit of practical and scientific agriculture and for the development of our unimproved lands."

For some 60 years, into the 1940's, the goal of Experiment Station research was increased agricultural productivity through every means possible. The original fields of chemistry and geology were expanded into specialty fields of agronomy, animal husbandry, botany, entomology, horticulture, meteorology, soil microbiology, and other comparable names depending on the interests of the scientists involved and the locale of the Station.

The early Experiment Station pioneers - Samuel Johnson, Wilbur Atwater, and our own George Hammell Cook - fused practical studies and the development of fundamental knowledge into the programs of their respective stations. Practical studies yielded the quickest results for direct acceptance by progressive farmers and therefore received the greatest publicity. However, in every Experiment Station and in many of the subject fields throughout these years, there was a core of scientists interested in developing basic principles for the sake of knowledge itself.

During these years the practical application studies in each of the State Experiment Station reflected local direction of research, applicable to area needs. During these same years the United States Department of Agriculture, established in 1862, developed a program of agricultural research reflecting the problems of major national significance which transcended state boundaries.

Gradually, the need for coordination of research programs was recognized; to minimize duplication and overlapping in research effort among the individual states, and to make possible joint research between the Federal government and individual states where site and environment were essential factors. Such coordination activity, gradually, was invested in the USDA through a department section called the Office of Experiment Stations and, through several reorganizations, to now the Cooperative State Research Service.

Post World War II research in Experiment Stations continued with the classical, practical and fundamental research that had made it possible for the American farmers' productivity to be the wonder of the world. Phenomenal production of all agricultural commodities became almost commonplace and contributed greatly to "winning the war and writing the peace."

But this great productivity created new problems of overabundance. Even during the war it was recognized that overabundance was to be a problem and legislation was passed authorizing new research in agricultural marketing. The goals were to reduce the cost of food distribution, provide a broader outlet for American farm products, promote scientific development of food processing, distribution, and marketing, and to improve human nutritional standards.

Funds were made available for this research at the Federal and State Experiment Station levels. This was not really a shift in research emphasis, it was new and complementary research to older line activities.

Even the application of these research results in improved marketing procedures did not completely relieve overabundance and, in some critics' minds, overabundance was a national disgrace. However, the swelling world population, their needs for food, and the American humanitarian instinct to help others in need has reduced the surpluses to a manageable reserve.

Also during the post-war period fundamental or basic research in agriculture received a tremendous boost in financial support. The creativity of new scientific developments from the basic concepts of Einstein, Oppenheimer, and others stimulated Federal legislative support of research for knowledge's sake alone in several agencies such as the U. S. Public Health Service, the National Science Foundation, the Atomic Energy Commission, and others.

Competent agricultural scientists as well as the more theoretical scientists benefitted from this new source of funds. The largess was so great that it seemed to many that basic research was smothering practical developments for the nation's farmers.

This was not a shift in research emphasis as the regular funds for practical and scientific agricultural research from State and Federal sources continued with nominal increases and without dramatics. It is true that some of the line Experiment Station scientists shifted their efforts further into basic studies. The freedom offered by these new monies to explore for new concepts was a joy to imaginative investigators.

However, most Experiment Station administrators maintained a balance in research that continued the flow of new practical applications, of benefit to the agricultural industry of their state. Also, the finding of new concepts accelerated new practical applications, increasing the efficiency of the research dollar spent.

Recently two forces have risen that, unless challenged, can cause an undesirable shift in emphasis in Experiment Station research at this as well as at other Stations.

The first force relates to the threat of centralized control of agricultural research at the Federal level. This can be accomplished by reducing the amount of regular funds allotted to the states by the Federal government and replacing it with what is called contract or grant funds.

The traditional funding to each state for three-quarters of a century has been by a formula allotment. The amount of money to individual states depends on a complicated ratio of farmer-rural-urban populations. However, these monies can be used for research pertinent to the needs of the states as determined by local researchers and administrators.

The alternative, of funds for contract or grant research, takes the control of needs for research at the State level to the needs as seen by Federal researchers and administrators. It also provides funds only for a year as competition for the funds are annual. Research cannot function and personnel cannot be hired on a year to year basis.

This threat was particularly acute in early 1966 in the submission of the Executive Budget for 1966-67 to Congress. It was recommended that formula funds be reduced by $8.5 millions with an increase of $2.9 millions of competitive contracts and grants. Obviously, under this arrangement, the direction of State research would have effectively passed from the states to the Federal government.

The Land-Grant Colleges and Experiment Stations alerted the recipients of their services to this situation who, in turn, let their congressional representatives know their displeasure with this budget proposal. As a result, Congress overturned the recommendation, restored the proposed cuts in formula funds, and reduced the proposed increase in competitive funds. However, the threat of similar action in future years remains. Each year, if budgetary recommendations are a threat to research planning at the local level, the threat must be challenged.

A second force that can cause an undesirable shift in emphasis in Experiment Station research is the result of reapportionment of legislative representation in each state. The former and traditional state legislative representation usually had a large proportion of representatives informed on the needs of the agricultural industry. Reapportionment will result in a large proportion of representatives not well informed on the needs of the agricultural industry or truly aware of the benefits of an agricultural industry to their urban constituents.

State financial support for agricultural research at respective Experiment Stations may not be supported by the representatives of urban areas unless we in agricultural work inform the constituents and their representatives of the benefits they reap from the state's agricultural industry.

Through agricultural research and teaching it has been possible for the farm population to combine a little labor with a lot of capital, science, technology, and managerial capacity to produce the food for the total population. This efficiency has allowed six percent of the country's working force to release 94% of the workers for professional and industrial pursuits.

Thus 94 out of every 100 workers can do research and practice in medicine for the health and well-being of the population, can do the research and production of goods and services that make for our high standard of living, and can do the development of defense of our interests which is the deterrent to aggression.

Through agricultural research and teaching it has been possible for the farm population to produce the nation's food supply that consumes less than 20% of their total income. Approximately 18 cents of the disposable dollar goes for food, leaving 82 cents of every dollar for other uses.

Most agricultural production uses open spaces and this contributes to satisfying the burgeoning desires of urban populations for open space, natural beauty, and recreational areas.

The technological "know-how" in farming today will not be satisfactory in 10 years if increases in efficiency, of benefit to the entire population, are to cease. Input costs for agricultural production are being reduced about one billion dollars annually due to the scientific and technical advances. Research and teaching must be continued to at least maintain these savings, and, hopefully to increase them.

It must further be understood that agricultural productivity with its potential aid of food to developing nations and its balances and checks in international relations is on the first line of defense along with military and our State Department's functions. Our food resources must be maintained.

In some respects Experiment Station research has been deficient in research pertaining to people. First we have been deficient in relating the environment as produced by man, to his polluting it and methods for restoring the quality of his air, soil, and water needs. The emergency to try to maintain and/or restore man's environment is here and we don't have the knowledge of what to do. There will be crash research programs instigated in heavily urbanized states that cannot be fully implemented except at centers of experienced biological excellence, such as the State Experiment Stations.

A second deficiency in people research is to discover how farm and rural living may have all the better cultural, aesthetic, institutional, and economic aspects of city living, while retaining desirable aspects of rural living. The challenge of genuine rural development in our country is as urgent as the challenges in international agriculture. Some of the grant and contract research funds mentioned earlier as being suggested for substitution for formula funds cover this socio-economic field. More pressures will be put on for Experiment Stations to do this research.

How the urgent needs for research to increase agricultural productivity, research for maintaining and/or restoring man's environment, research for people development in rural areas will mesh together with available facilities and personnel without some shift in research emphasis is hard to visualize. However, with goodwill on the part of all concerned, the Experiment Stations throughout the nation will meet these challenges. The results will be a benefit to all as has been the case of the crises before.

REPORT OF THE THURSDAY MORNING SESSION

The session was called to order in the Labor Education Center at 8:30 a.m. by the Session Chairman, Dr. William H. Annis, University of New Hampshire, Dr. Annis introduced Mrs. Sue Ford, Session Secretary for the morning.

Chairman Annis then introduced Mr. H. N. Hunsicker, Office of Education. Mr. Hunsicker spoke on the topic, "Classification of Instructional Areas and Occupational Objectives." Two mimeographs, "Classification of Areas of Instruction," and "Classification of Agricultural Occupations for Reporting Purposes on Form OE-4048," were provided for discussion purposes only.

Mr. Hunsicker also distributed copies of the Form OE-4048, Enrollment in Vocational Education Programs. Following a discussion on the use of the Form, the OE-4048's were collected. It was noted that the forms would be mailed at a later date with an appropriate letter of transmittal.

Dr. W. Howard Martin, University of Connecticut, discussed the topic, "Developing Occupational Experience in Agriculture." The title of the topic is also the title of a bulletin being written by Dr. Martin for the U.S. Office of Education. He explained the theoretical framework out of which the bulletin will be written.

Dr. Bruce Tuckman, Rutgers - The State University, presented a paper entitled, "The Teacher and the Psychology of the Culturally Deprived." An edited copy of Dr. Tuckman's paper is a part of this section of the Proceedings.

Following the presentation for the morning, the group was divided into three smaller groups to discuss the topic presented. Mr. Jesse A. Taft, Massachusetts, chaired the group that discussed the topic, "Classification of Instructional Areas and Occupational Objectives." The consultant was Mr. H. N. Hunsicker.

Dr. Norman K. Hoover, The Pennsylvania State University, chaired the group which discussed the topic, "Occupational Experiences in Agriculture." Dr. W. Howard Martin was consultant for the group.

Dr. Fred Tom, Cornell University, chaired the session, "The Teacher and the Psychology of the Culturally Deprived." Dr. Bruce Tuckman was the consultant for the group.

Discussion groups were not required to report back to the general conference.

The meeting was adjourned for lunch.

THE TEACHER AND THE PSYCHOLOGY OF THE CULTURALLY DEPRIVED[1]

Bruce W. Tuckman
Rutgers - The State University

In order to treat the subject, the first question we must address ourselves to is what does it mean psychologically to be culturally deprived or culturally disadvantaged. A person who is culturally deprived is more likely to be characterized by the things that will be mentioned than is a person who is not culturally deprived. However, what is said may not always apply equally to all individuals who are culturally deprived, but it will be more likely true than false.

First of all, being culturally deprived very often means being biologically deprived; that is, being hungry, underclothed, and in need of medical and dental treatment. Medical and dental treatment are often needed for the individual both because of his general level of poverty--being unable to afford these services--and because of the fact that the parents of the culturally deprived child or adolescent are very often unaware of the importance of medical and dental treatment.

Being hungry can have many ramifications. Breckenridge and Vincent (1962) have reviewed studies demonstrating that insufficient nutrition affects growth, behavior, and mental performance. From this work we can expect the hungry individual to pay less attention in the classroom than would be desired, and to have a reduced mental effectiveness. The work of Schorr (1964) also indicates that malnutrition has an effect on attitudes and behavior. Because of this biological deprivation we can make the generalization that the culturally disadvantaged person will be unable to delay gratification. This orientation toward immediate gratification or immediate reinforcement is generally coincident with a high state of biological need. The work of Hull (1952) and his associates in the animal laboratory has shown that as the drive state of the animal increases, that is, as the hours since the animal has last been fed increases, the tendency for the animal to perform the desired behavior if reward is delayed is greatly reduced. We can expect the same phenomena to apply when dealing with a human being if he is biologically deprived or has a history of biological deprivation, as is often the case with the culturally deprived individual. His behavior will be oriented toward satisfying immediate biological needs and he will not be willing to perform educational behaviors with a promise of reward forthcoming. LeShan (1952) has shown that lower class training features more immediate rewards and punishments leading to an orientation toward quick sequences of tension and relief. Mischel (1961) has shown that delinquents have a preference for immediate reinforcement. Thus, the first general statement about what it means to be culturally deprived is that it means very often to be biologically deprived and, as a result of this and other training factors, unable to delay gratification.

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[1] Prepared for presentation at a Colloquium entitled, "Preparing Teachers for Disadvantaged Youth." Rutgers - The State University.

Secondly, to be culturally deprived very often means to have a lower score on an intelligence test (c.f. Klineberg, 1963--for Negroes). This is not to say that a culturally deprived individual has a reduced intelligence: rather, a culturally deprived individual has less of his intelligence potential developed than does an individual who has not suffered cultural deprivation. The low score is not native but experiential (Pettigrew, 1964).

The excellent work of Hunt (1961) in bringing together all available relevant literature dealing with the issue of predetermined development and fixed intelligence points out that cultural deprivation almost always produces less developed intelligence, but that remedial treatment or improvement undertaken in the years of childhood, even in early adolescence, can modify the situation substantially. Dramatic modifications have been evidenced in the studies of Skeels and Dye (1939) and Wellman (1940). In the Skeels and Dye study, orphans were taken to an institution for the feeble-minded and raised by the patients. Gains up to 40 IQ points resulted. Dennis (1960) has shown, in an orphanage in Teheran, that many children do not walk by four years of age. Why should this be so? It occurs because there is less stimulation in the culturally deprived home in the direction of developing cognitive, perceptual, and verbal skills. Our intelligence tests and the situations that they have been developed to predict for are situations that involve verbal, cognitive, and perceptual skills. This is obviously true of the classroom. In the classroom we call upon the students to manifest these three kinds of skills and all standardized intelligence and aptitude tests are weighted heavily in these three areas (as well as a fourth, numerical).

In the culturally deprived home, as mentioned before, the major orientation is toward the immediate gratification of biological needs. Much energy and emotional involvement by the parents must be spent on this task. Consequently, little energy and emotional involvement remain for the development of intelligence in the children. The work of Hunt (1961, 1964), Ausubel (1963), and Wolf (1964), among others, points up the fact that a major factor contributing to intellectual development is stimulation in the home by the parents. Moreover, this factor is of peak importance in the early years of life, according to Bloom (1964). The parents themselves in most culturally deprived homes have had little education and are themselves in the situation where their cognitive, perceptual, and verbal skills may be reduced. They are not aware of many instruments of education that are available for use in the home, and they do not have the time and the skill themselves to carry on conversations with their children which are necessary to develop verbal skills. Deutsch (1963), in his examination of homes in depressed areas, finds few educational objects and a general absence of parental stimulation appropriate for cognitive, perceptual, or verbal development. The findings of John (1963) lead her to conclude that the "acquisition of more abstract and integrative language seems to be hampered by the living conditions in the homes of lower-class children." This is supported by Bernstein (1962) who finds less language facility among the lower class. Siller (1957) finds less conceptual ability among low status children. Thus, the second general statement about cultural deprivation is that it produces reduced intelligence as a function of lesser, cognitive, perceptual, and verbal skills. However, it must be stressed again that this situation is not permanent, fixed, or unchangeable. It is a situation that can be rectified as a function of the educational situation as evidenced by the work of Boger (1952) and others mentioned before.

A third characteristic which is generally produced in conditions of cultural deprivation is an absence of achievement motivation. Achievement motivation, which has been widely described, discussed, and researched (c.f. McClelland et al., 1953; Atkinson, 1958) refers to the desire on the part of the individual to achieve either for the intrinsic satisfaction associated with achievement, or for the rewards society metes out as a function of achievement behavior. This is very strongly associated with the middle class, as McClelland has shown in his book The Achieving Society (1961). The American society, and particularly the middle class of American society, as shown also by the work of Rosen (1956), is extremely high in achievement motivation.

Where does achievement motivation come from? According to McClelland, achievement motivation is a result of rewards being offered for achievement behavior (i.e., approval) and punishments for failure. Consequently, the individual who is motivated or oriented to maximize rewards will perform achievement behavior. According to Winterbottom (1958) and to Rosen and D'Andrade (1959), achievement is further enhanced by identification and independence training. The parent puts much emphasis on achievement behavior in the middle class. As a result of success on the part of the potential achiever and consequent rewards, achievement motivation may well be developed. If the parents are themselves achievers, the development of this motivation in the child will be furthered. Excessive failure and punishment can produce in the individual a motive other than achievement motivation, namely: fear of failure. In the culturally deprived home there is little evidence that achievement is either rewarded or lack of achievement punished. There is little emphasis placed on academic achievement or cultural achievement on the part of the child, and the parent is not himself an achiever by virtue of his own upbringing and lack of present opportunities. The work of Bronfenbrenner (1961) suggests that academic competitiveness is a function of middle-class upbringing but not lower-class upbringing. Again, the reason for this is insufficient time and a minimum orientation in that direction on the part of the parents themselves. Kahl (1953) has shown that parents interested merely in getting by do not send their sons to college. Consequently, we may state as our third generalization that cultural deprivation usually means having little achievement motivation.

The fourth and last general area in which cultural deprivation has implications is that of attitudes toward self, attitude toward others, and attitudes toward the world. As a result of having to live in general hardship conditions, very often having reduced opportunities, being discriminated against, and living in a society that has the highest standard of living ever achieved and not being able to partake of this abundance, the individual may often develop a negative, cynical, fatalistic, and simple view of the world. He may often associate himself with undesirable or criminal elements, move in the direction of juvenile delinquency, and fall into the general clinical category known as psychopathic or sociopathic personality. The underprivileged person feels that society is doing little for him, giving him little opportunity, and so he is quite right in taking matters into his own hands, and in an asocial fashion, attempts to mold his own situation. If he does not behave asocially, he may simply adopt a set of attitudes which are very negatively related to society. These will be expected to appear in the classroom, since a classroom is a miniaturization of society, and the teacher a representative authority. Hieronymus (1951) has shown a substantial correlation between socio-economic status and attitudes toward education.

The attitude of the culturally deprived person toward others will be similar to his attitude toward the world to the extent that he sees others as being representative of, or exemplary of society in general. That is, he will be negatively-oriented toward authority figures and feel that manipulation is a reasonable way to gain his ends. With regard to the attitude that he has toward himself, we can expect that he will have a low level of aspiration, and realistically so, since he sees his contemporaries and his elders having little success in life and having little opportunity to improve their situation. He may come to expect this with regard to himself (Hieronymus, 1951) and consequently manifest a low level of aspiration and low self-expectations. He may, on the other hand, feel that his inability to improve is a function of his own inability and consequently develop low self-esteem. Ausubel and Ausubel (1963) and Goff (1954) have shown that social rejection among Negro children leads to low self-esteem and a low level of aspiration.

In reaction to his own unsuccessful situation in society and the unsuccessful situation of his friends and his parents, the culturally deprived person may either become extrapunitive or intra-punitive, using the Rosenzweig concept. That is, he may feel that the fault lies in himself and consequently have low self-esteem, or else he may react extrapunitively toward the source of his frustration via delinquent acts. In either case, low self-expectations and a low level of aspiration can be expected.

Thus, our fourth generalization is that cultural deprivation yields unfavorable attitudes toward self, others, and society, which, in turn, may result in delinquent behaviors.

We may say in conclusion that the implication of cultural deprivation for education is to produce individuals with an absence of learning to learn capability, to borrow a phrase from Bloom, Davis, and Hess (1965). Learning to learn for human beings encompasses the four principles discussed. A person who has learned to learn must be able to delay gratification or reinforcement, for the fruits of education are considerably delayed after the beginning of the effort. Learning to learn means having the appropriate skills on which education is based, namely, cognitive, perceptual, and verbal skills. Learning to learn means having the appropriate values, namely, values toward achievement. And finally, learning to learn means having the appropriate attitudes toward yourself and your environment. Having these qualities means being set to learn. Having these qualities means having the strategy for obtaining knowledge. Having these qualities means being able to uncover general solutions and general truths rather than always being restricted to the specific.

Being culturally deprived means not having learned to learn in many cases. What can the educator do for such a person? It is to this question that the remainder of the presentation will address itself.

When the culturally deprived child goes through school the situation only worsens. His deficit, relative to his middle-class counterparts, becomes cumulatively greater. Evidence for the accumulation and worsening of the deficit has been provided by Deutsch (1964) and Krugman (1961). Thus, schooling tends not to improve the situation by providing the necessary skills, attitudes, and values upon which learning is based; rather, the deficit becomes greater and greater as the years of education proceed.

By the time adolescence is reached the culturally deprived student, according to data collected by Osborne (1960), shows reduced reading skills, relative to a nondeprived group, reduced arithmetic skills, and a lower mental age.

Let us now examine specifically what the teacher can do in order to better teach culturally deprived students. These suggestions will be modeled around the four major areas of deprivation as described in the beginning of the paper. First of all, the teacher should attempt to reduce the delay in reinforcement as much as possible. In a very practical sense this can be done by quick scoring of examinations, by providing the student with continual and immediate feedback as regards his performance, and, primarily, by constantly attempting to relate the school experience to real life experiences. Much effort is spent on education before the results of this effort can be obtained. Many students who drop out of school are not willing to tolerate this delay; among these are often the culturally deprived.

In order to moderate this delay the practical significance of education must constantly be pointed out to the culturally deprived student. In teaching the student to read, have him read the kinds of materials that he reads in his everyday experiences. If he is an adolescent in high school, and will soon be entering the world of work, have him read work instructions, want ads, and other kinds of materials that he will be reading in the real world. In mathematics have him work on problems such as a personal budget or financing a car or making calculations on a blueprint. In this way he will see the applicability of the effort he is expending in school to his real needs in life; this will provide substantial reductions in the delay of gratification or the delay of reinforcement. Too often our school situations represent an ivory tower with respect to reality. It is necessary that this distance be bridged. While it is not entirely possible for the teacher to do it by himself, he can facilitate matters by always keeping in mind the fact that the culturally deprived student may not be able to delay reinforcement. He must always think of what he is teaching in the sense of what practical significance does this have for the student.

In the area of skill training, what is it that the teacher can do with respect to the culturally deprived student? The teacher should be aware of the fact that perceptual skills underlie reading and verbal skills, which in turn, underlie cognitive skills. When a student is unable to perform satisfactorily in a cognitive task, it may be because he is in need of remedial help on verbal or perceptual levels. While the teacher may not always be the most skilled person in providing this remedial help, it is necessary that he be able to diagnose where such help is needed and recommend the students to remedial programs, where they exist.

One useful point would be to attempt to teach at the perceptual level as much as is possible. Teach by showing, by doing, use gestures, use pictures, use diagrams, use schematics, use the chalkboard. Aim for the perceptual level and attempt to avoid the verbal level as much as possible. Give the students puzzles, like jigsaw puzzles, Chinese puzzles, and other kinds of puzzles that require some degree of perceptual discrimination in order to improve their skill at the perceptual level. Have them read as much as possible, even in courses where reading is not directly the subject matter to be taught.

In vocational training programs constantly have the student read instructions, read diagrams, read sketches, and read specifications. Try to talk to students as much as possible. It has been suggested above that teaching be done by showing rather than by talking. This may appear to be contradictory. It is not! By talking is meant conversing, as one converses to pass the time of day, not teaching via extended and complex verbiage. To improve the students' verbal skills they must hear words, but this must occur primarily outside of the pressures of the formal learning process. Through conversation verbal skills are developed. When dealing with many students this is very difficult, but insofar as it is possible, talk. Talk to the students to provide them with the conversation and the verbal stimulation that is absent in the home. This is especially true with younger students.

In the area of values and achievement motivation, the magic word is REWARD. The child or adolescent should be rewarded frequently and punished rarely. He should be rewarded for performances which are less than perfect but have some merit to them. The work of Skinner (1938) in the animal laboratory has shown that behavior can be shaped through a technique called successive approximations. Using this technique, behaviors which bear only slight resemblance to the desired end behavior are reinforced, and gradually this approximate behavior is shaped in the direction of the desired behavior by reinforcing behaviors that are more and more similar to the desired end behavior. The same can be done with humans in the area of achievement motivation. By reinforcing only minimally successfully behavior to start with, the likelihood of successful behavior will increase and it will be possible to reward more successful behavior in the future, and hopefully shape achievement-oriented behavior.

Punishment, on the other hand, will lead to fear of failure as the work of Atkinson and collaborators (1958) has shown. Estes (1944) has shown that punishment does not cause behavior to disappear; it simply inhibits its occurrence in the presence of the punishing agent. If failure is punished by the teacher, then the behaviors that lead to the failure may not appear within eye range of the teacher, but they will not cease to exist in the repertoire of the child or the adolescent. Reward, on the other hand, creates a behavior pattern within the individual. Therefore, when dealing with culturally deprived students, for whom achivement motivation is minimal, failure should not be punished. The teacher should wait for some glimmer of successful behavior or achievement-oriented behavior and then reward it. He should attempt, through the generous use of reward, to develop an achievement pattern in the student. This may be facilitated by posing simple tasks or simple problems for the student where the likelihood of success is great, and then rewarding successful performance. The difficulty of the tasks can be gradually increased as the generous use of reward has made the possibility or probability of success more likely. Moreover, the rewards should be as tangible as possible. The research of Zigler and DeLabry (1962) has shown that tangible rewards are more successful than intangible rewards with lower-class students, while the reverse holds true with middle-class students. Try to make the rewards as tangible as possible. This of course is limited by the opportunities available to the teacher. One cannot be giving away financial rewards, for instance, or candy, for every good performance. In many cases, the only rewards available to the teacher are such intangible ones as praise, or recognition, or approval. These are obviously important, too. Make them as obvious and concrete as possible.

When it is necessary to use criticism make this criticism objective. Criticize the work and not the person performing the work. The Lewin, Lippitt, and White studies (1939) gave clear evidence for the fact that group leaders using personal criticism were much less popular than were leaders whose criticism was clearly objective.

Finally, the all important area of attitudes is an area where a teacher can make major impressions and inroads into the problems of the culturally deprived. The teacher is a representative of society. He is, moreover, an authority figure second only to the parents as a major source of identification. A teacher can take advantage of this--especially when the parent is not a good identification figure. Using the parent as an identification figure simply perpetuates the ethic of the deprived. To change attitudes of the deprived student toward himself, others, and society the teacher must be warm, understanding, and sympathetic, in short, take a personal interest in the student. If he is likeable, and yet firm, and takes an interest in the student, the student will attempt to emulate him and use him as an identification figure (Witty, 1947). To the extent that the teacher incorporates prevalent social values, these will be transmitted to the culturally deprived student through identification. If the teacher is fair, then the student's attitudes toward society may well be changed.

Many of the successful remedial projects, such as the Manhattanville Project, have shown that a key to success is working with parents. The teacher should attempt to involve the parent, and work with the parent as much as possible, for if he can change the attitude of the parent the possibility of changing the attitudes of the student are double-barreled, as a result of his own direct influence and the influence of the parent over whom he has exerted some influence. The fact that involvement enhances the probability of attitude change has been well documented. Industrial studies such as those of Coch and French (1948), and studies such as that of Lewin (1952), clearly illustrate that individuals who feel that they are involved are more likely to have their attitudes changed.

Also, get the students involved in providing some of their own direction in the classroom. Again, the classic Lewin, Lippitt, and White (1939) studies demonstrated that attitudes, motivations, and satisfaction were all increased as a result of a democratic group situation where the group exerted some influence over its own direction. This approach, which has often been called the learner-centered or pupil-centered approach, has been shown in some studies to be highly successful. Culturally deprived students must be able to take on the role of authority in order that their attitudes toward authority can be changed.

Outside of a group-centered or pupil-centered approach, which enables the group to have some control over its fate, the use of role playing is also a way of changing attitudes. The study of King and Janis (1956) demonstrates that role playing can be used effectively to change attitudes. Let the students play the game of parents and children. Let some of the students be the children and some of the students be the parents and have them act out a home situation. Give them a feeling of what it is like to be a parent. Give them a feeling of what it is like to be an authority figure in society. This may well change their attitudes towards the very society which they often find intolerable. Playing a role which is dissonant with ones attitudes has been shown to cause those attitudes to change (Brehm, 1960).

Use praise and approval to change their self-esteem and self-acceptance. Let them know that you think they are worthwhile persons and are capable of good performance. Provide them with tasks of graded difficulty leading to success in order to change their level of aspiration. Jucknat (1938) has shown that aspirations go up as a function of success, while Sears (1940) demonstrated that success leads to the setting of realistic goals. One must be careful of pushing students too hard and too fast toward higher levels of aspiration. Many culturally deprived students have what Dollard and Miller (1950) call an approach-avoidance conflict with regard to success; they both desire it and fear it. As they expend more and more effort and are pushed closer and closer to success their fear becomes stronger than their desire (Brown, 1948). Dollard and Miller recommend that efforts be made at this point to reduce the fear, rather than increase the desire. The teacher, by leading the student toward success through the use of graded tasks, can reduce the fear associated with school.

Some students will need discipline and will have to be handled in a firm authoritative way; others will need warmth, acceptance, and understanding, and will have to be dealt with in a yielding way. The work of Hunt (1965) is applicable here. Hunt has spoken of the differential diagnosis--differential treatment technique. What this means is that people are different, and the teacher must become aware of the differences and not attempt to teach or treat people in the same way. They must be treated in terms of the differences. *In the case of a student who is in need of authority, handle him in need of acceptance by authority and permissiveness, handle him in a permissive fashion*.

If the teacher keeps some of these points in mind, then the culturally deprived student may well be able to overcome his initial experiential deficit and derive a useful education from his school experiences.

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REPORT OF THE THURSDAY AFTERNOON SESSION

Following lunch the Conference group boarded a chartered bus and traveled to Princeton, New Jersey, where they visited Educational Testing Service.

Miss Frances Ottobre, Professional Associate, presented an overview of Educational Testing Service by means of slides and a record. A brief question and answer period followed.

During the tour which followed, the group was shown the computer center and the various processes associated with the testing program.

Dr. Benjamin Shimberg, Director, Vocational-Technical Education Projects, Educational Testing Service, acquainted the group with the thinking of the newly created department he organized.

Each guest was given a Test and Measurement Kit.

The bus returned to New Brunswick at 5:30 p.m.

REPORT OF THE THURSDAY EVENING STAFF SESSION

The session was called to order by the Session Chairman, Dr. Ralph P. Barwick, University of Delaware. Dr. Barwick introduced Mr. Stephen Tucker, Graduate Student, as Sessions Secretary.

Dr. Philip Teske, Educational Resource Development Branch, U. S. Office of Education, was introduced to the group and given the floor to discuss research funds and fundings. Dr. Teske's remarks reflected a tightening budget. He noted that there will continue to be money to fund quality research proposals.

Mr. William Hamilton, Dr. Joe P. Bail, and Dr. Alan G. Robinson presented aspects of the ongoing research entitled, "Practices Contributing to Quality in Off-Farm Secondary Programs." Dr. Robinson also discussed a pre-convention meeting of agricultural educators from New York and the New England States for the purpose of developing a research proposal in recreation and conservation.

Dr. Charles W. Hill, Cornell University, discussed the booklet, "Guidelines and Procedures for Directed Work Experiences in Agricultural Education." A research project by the same title is presently being conducted in secondary schools. The contents of the booklet is not a part of the Proceedings since it may influence control groups in the study.

The meeting was adjourned.

REPORT OF THE THURSDAY EVENING GRADUATE SESSION

The graduate session was called to order by Mr. James Sheaffer, Graduate Student, Rutgers - The State University. Mr. Sheaffer introduced Mr. Edward Evaul, Graduate Student, as Sessions Secretary.

Mr. Robert A. Cobb, Teacher of Agriculture, North Harford High School, Maryland, discussed his completed Master's research project. He discussed, "Factors Associated with Curriculum Choice by Students in Selected Maryland High Schools." Mr. Cobb presented each of the conference participants with a copy of the completed research report.

Mr. Wilmot Oliver, Rutgers - The State University, collected all the data necessary to write the final report for his doctoral study. Mr. Oliver discussed the topic, "The Relative Effectiveness of Feedback of Supervisory and Student Reactions with Beginning and Experienced Vocational Teachers." His research was supported in part by a small grant from the 4(c) Funds.

Mr. Robert Norton, Cornell University, reported on a research project entitled, "Using Programmed Instruction with and Without Skills Training to Teach Psychomotor Skills." Mr. Norton reviewed a proposal which he was in the process of preparing for funding.

Mr. Samuel Curtis, The Pennsylvania State University, reviewed an In-service Teacher Education Experiment to Determine the Effectiveness of a Farm Business Simulation Model. An objective of the study will be to determine differences in student learning among five methods of instruction.

The meeting was adjourned.

PROGRESS REPORT

ARTICULATION OF HIGH SCHOOL AND TECHNICAL COLLEGE CURRICULUMS IN AGRICULTURE

by

Joe P. Bail

This aspect of our study is concerned with the development of a plan for improved articulation of off-farm agricultural occupation programs at the secondary school and post-high school (agricultural and technical college) level as regards pupil selection, skill and competence level, curriculum content, and entry job level of respective groups.

Perhaps we should define the term articulation before going any further. One of the best definitions and descriptions of the process is by C.W. Slay* writing in the Bulletin of the National Association of Secondary School Principals. I quote it here for your information.

> "Articulation in Education is coordination of effort in those areas in the field where there are joint concerns and responsibilities between more or less independent units.
>
> Good articulation insures smooth transition, continuity of the educative process, efficient development of pupils and maximum use of resources. It minimizes conflict and time consuming readjustments which frequently result in confusion and sometimes in frustration. It reduces failures and eventual dropouts. It is involved with physical, intellectual and emotional readiness for the next step. Good articulation is a requirement in administration, curriculum, guidance, instruction and use of facilities. Its basic tool is communication, two-way communication. The principal function of this communication is to facilitate orderly progression. The idea is to foster the kind of relationships, between various levels of education in which understandings, appreciations and cooperation are mutually sought and mutally protected."

For the benefit of those who are new to our group, I would like to review the proposed steps in this part of our study. They are:

Step 1. Identify the curriculum areas to be studied.
Step 2. Secure course outlines of high school and college programs in these areas.
Step 3. Visit selected institutions to observe the programs.
Step 4. Hold a series of conferences with representatives of high schools, State Education Department, and State technical colleges to study curriculum offerings.
Step 5. Make recommendations or suggestions regarding improved articulation, understanding, and future development of the programs at the high school and college level.
Step 6. Prepare a report with suggested guidelines for improving the articulation of high school and technical college programs in agriculture.
Step 7. Disseminate the findings to high schools and post-high school institutions throughout the Northeast.

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*C.W. Slay, "High School - College Articulation," Bulletin of the National Association of Secondary School Principals. 48, No. 293, September 1964.

Progress to date on the steps listed above are as follow:

Step 1. The curriculum areas of Agricultural Business, Agricultural Mechanization, Conservation, and Ornamental Horticulture were identified in the proposal as the areas for study. Programs in some areas have been established for years in high schools or post-high school institutions of New York State. Others are emerging as an outgrowth of expanded and revised offerings at both levels.

Step 2. Each high school and technical college participating in the study has been asked to submit courses of study, course outlines, and other pertinent data regarding the programs they are now offering. A summary of these data will be provided to all participants. Copies of suggested state courses of study at the high school level have been provided to all participants.

Step 3. Visits to most all of the high school and post-high school programs have been made by the project staff. As indicated by Mr. Hamilton, the high school group has been interviewed regarding many aspects of their offerings. The remaining schools will be visited by the project staff before January 1, 1967.

Step 4. Our first Articulation Conference was held on June 17, 1966. This was an exploratory session where representatives of the various groups were brought together to discuss the common areas of interest to determine future steps in the project. Today's session is our second conference and you will learn the details of our plans for this meeting in a few minutes.

Steps 5, 6, and 7. These steps relate to our suggestions for improved articulation as an outgrowth of the total work of the project. Hopefully, a report will be prepared which will provide information and guidelines helpful to all concerned with programs at both levels. This report will be disseminated to schools in the Northeast who may be considering new programs or who wish for improved understanding and correlation among existing programs.

As indicated above, much remains to be done. We are sincerely appreciative of the excellent cooperation and concern of all of you in this endeavor. Let me reiterate again, our purpose is to improve communication and dialogue among the various groups to the end that our students in the various programs will have the best educational program possible, at all levels.

Your active participation in today's session will be an important step in reaching this goal.

November 4, 1966

Submitted By: Cornell University as a Sub-Contract from New York State Education Department, Albany.

Principal Investigators: Professor Joe P. Bail and Mr. William Hamilton.

Title: A Study of the Innovative Aspects of Emerging Off-Farm Agricultural Programs at the Secondary Level and the Articulation of Such Programs with Technical College Curriculums in Agriculture.

Major Objectives:
(1) To identify and assess the innovative procedures followed by schools, in which emerging programs in off-farm agricultural occupations are underway in agricultural business, agricultural mechanization, ornamental horticulture, and conservation.
(2) To develop a plan for improved articulation of these off-farm agricultural occupation programs at the secondary school and technical college level in New York and Connecticut.

Procedures: At the Secondary Level:
Step 1. In cooperation with the supervisory staff in Agricultural Education in New York and Connecticut, prepare a master list of secondary schools which are conducting off-farm agricultural occupation programs.
Step 2. Select one or more schools in the emerging areas of: agricultural business, agricultural mechanization, ornamental horticulture, and conservation in which to make the study.
Step 3. Observe the selected programs in operation during the period of April 1 to June 30.
Step 4. Prepare an instrument(s) to identify the successful innovative procedures and practices used in these programs.
Step 5. Administer the instruments to knowledgeable people, including teachers, administrators, counselors, employers, students and parents.
Step 6. Determine the successful practices based upon the information gained.
Step 7. Prepare a list of guidelines for operating and conducting similar programs in other schools throughout the Northeast.
Step 8. Disseminate the results of the findings to interested school systems.

At the Post High School Level:
Step 1. Identify the curriculum areas to be studied.
Step 2. Secure course outlines of high school and college programs in these areas.
Step 3. Visit selected institutions to observe the programs.
Step 4. Hold a series of conferences with representatives of high schools, State Education Department and State technical colleges to study curriculum offerings.
Step 5. Make recommendations or suggestions regarding improved articulation, understanding, and future development of the programs at the high school and technical college programs in agriculture.
Step 6. Prepare a report with suggested guidelines for improving the articulation, of high school and technical college programs in agriculture.
Step 7. Disseminate the findings to high schools and post-high school institutions throughout the Northeast.

Time Schedule: February 1, 1966 to February 28, 1967.

PROGRESS REPORT ON INNOVATIONS*

Project Title A Study of the Innovative Aspects of Emerging Off-Farm Agricultural Programs at the Secondary Level and the Articulation of Such Programs with Technical College Curriculums in Agriculture (USOE - NY 1988-13)

Accomplishments in Innovations

Step 1. A master list of programs has been completed by the program areas included in the study.

Step 2. Two schools from each of the four specialties have been named from New York and two schools in Connecticut selected for the study.

Step 3. Visits to all of the high schools have been made by the members of the project staff. Most of the centers have been visited at least twice to date.

Step 4. Instruments have been prepared to gather the data for the project. These have been approved by the U.S. Office and interviews have been conducted with the New York Districts. The Connecticut districts will be visited for these interviews during the coming week.

Step 5. Administrators, teachers, counselors, employers, parents and students have been included in the interviews mentioned; step 4.

Step 6. The determination of the successful practices based on the information gathered will be completed shortly after the Connecticut interviews. The data gathered to date has all been coded and is ready for the computing center.

Step 7. Many suggestions for guidelines are on hands and are ready to be worked in with the data to determine successful procedures to include in the final report.

Step 8. Dissemination of the results of the findings will await the final report completion. Of interest in this regard is the notation that requests for a copy of the final report have been received from the midwest and as far away as California.

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*Dr. Alan G. Robertson, Chief, Bureau of Occupational Educational Research, New York State Education Department.

REPORT OF THE FRIDAY MORNING SESSION

The final session was called to order by Session Chairman, Dr. Charles C. Drawbaugh, Rutgers - The State University. Dr. Charles Drawbaugh introduced Mr. Richard Shackelton, Research Assistant, Rutgers - The State University, as Sessions Secretary.

Dr. Gene M. Love, Chairman, Research Committee of the Agricultural Division, American Vocational Association, called the group to order for a Regional Conference Planning Meeting. Minutes of the meeting are written into this section of the Conference Proceedings.

The Regional Research Conference Committee Meeting was adjourned.

Dr. Ralph Barwick, Alternate Vice President, American Association of Teacher Educators in Agriculture, called a meeting of AATEA. Minutes of the AATEA Meeting are written into this section of the conference.

The American Association of Teacher Educators in Agriculture was adjourned.

Dr. David R. McClay announced that he would be taking a position on the Editor Management Board of the Agricultural Education Magazine. He asked members of the Conference for names of persons to replace the present editor who will be retiring from the position after July 1, 1967.

The topic for discussion for the morning session was, "An Introduction to Research Coordinating Units." The panel to discuss the topic consisted of Dr. Ralph LoCascio, New Jersey; Mr. Peter Harkness, New York; Dr. Jay Smink, Pennsylvania; and Dr. W. Howard Martin, Connecticut. Notes on the remarks made by each of the panelists can be found in this section of the Conference Proceedings. Following an extensive question and answer period the meeting was adjourned.

The Conference was adjourned at 11:00 a.m.

AN INTRODUCTION TO RESEARCH COORDINATING UNITS

Dr. Ralph LoCascio, New Jersey

The RCU's are funded under the 4(c) provision of the 1963 Vocational Education Act. The New Jersey Unit is dependent upon this financial source. The amount of funds are uncertain at the moment. Funds formerly given may be cut as much as half.

There are 44 RCU's in this country. Their organization falls into one of two patterns; they may be university based or state government based.

The RCU functions to coordinate and stimulate research in vocational education and to disseminate information about research at the State and National levels. In New Jersey the RCU is in the vocational division of the State Education Department.

RCU funds were intended primarily for occupational research and development. However, operationally they are not primarily research oriented.

In agricultural education research there has not been much planning due to the lack of requests for the service. Guidelines for facilities planning of all agriculture programs may be developed.

The RCU handles direction of curriculum research and instructional media, direction of pilot programs, evaluation, program planning, and the development of a master plan for vocational education in New Jersey.

Dr. Jay Smink, Pennsylvania

The Pennsylvania RCU has been in existence for two months. As is true for New York and New Jersey, the Pennsylvania Unit is located in the State Department. It is one of four divisions of the Bureau of Research. The staff is planned to number six, however, only two positions are filled at the present time.

Direction will be provided by an advisory committee. Possible areas of concern include vocational guidance, field supervision, teacher education and certification, and follow-up of graduates and dropouts.

People to be served include those in comprehensive high schools, area vocational-technical schools, community colleges, state colleges, and state universities.

Dr. W. Howard Martin, Connecticut

Dr. Martin substituted very ably for Dr. Philip Masley. He noted that the RCU emphasis has been on the University of Connecticut studies. Two of the studies have been published. In agriculture the need is for study in food distribution, particularly in the supermarket field.

In addition to normal funding, small grants to teachers are incentives to concentrate on research projects.

Dissemination of information is done partially by a quarterly published by the Connecticut Research Coordinating Unit.

THE STRUCTURES, GOALS, AND ACTIVITIES OF THE NEW YORK RESEARCH COORDINATING UNIT

by

Peter T. Harkness

In the year June 1965-July 1966, the New York State Research Coordinating Unit progressed from a one man operation to one utilizing the services of a Chief, one full-time associate and one full-time assistant, two part-time consultants, one trainee and two typists. In addition, the services of eighteen consultants were used to conduct studies and organize special data.

Our Research Coordinating Unit, hereafter called an RCU, is located in the State Education Building in Albany and is an integral part of the Office of Research and Evaluation.

New York State has pioneered the appointment of personnel to its staff to work full time on research in across-the-board vocational education. As early as the Fall of 1962, plans were made and a position approved in the budget of the Vocational Education Instructional Services office to add such a position to the Office of Research and Evaluation. So you see this step well proceeded Public Law 88-210. New York was not the only state, however, that got its foot in the door early. Both Illinois and Connecticut were pioneers, too, in setting up state vocational education research operations. The approval of the vocational education research position provided for a full-time research professional with the same basic research qualifications as other professionals of the same grade, broadly knowledgeable in vocational education although not a subject matter specialist, and appointed from a Civil Service list.

Until May 1965, funding was made through Title I of the George-Barden Act. But from June 1965 onward, after federal approval of New York's RCU, funding has been through the Federal Vocational Act of 1963.

Supervision of our RCU is under the Associate Commissioner of Research and Evaluation and the Director of the Division of Education Research.

It is evident, then, that we are not attached to the Vocational Education Division directly. However, major work assignments and duties originate with the Assistant Commissioner for Occupational Education, who is the State Director for Occupational Education, and are channelled either directly or through the Associate Commissioner for Research. Excellent professional relationships and mutual regard between the chief administrators of the two offices and the fine working relationship of the Bureau of Occupational Research (which is the state name of our RCU) with other bureaus in the Education Department have made for a smooth working operation.

In March 1965, Dr. James E. Allen, Jr., New York State Commissioner of Education, sent letters throughout the State to Chief Executive Officers of Higher Education Institutions and to Chief School Administrators and Executive Officers of Community Colleges and Institutes informing them of the availability of federal funds for research in Vocational Education. He directed that all inquiries from these groups should be sent to the Division of Research and Evaluation. As a result, this RCU rendered advise and assistance to institutions and agencies throughout the State.

In accordance with the Federal Vocational Education Act of 1963 which provides funds to the states under Section 4(c) for research, demonstration, and experimental projects, the New York RCU has been promoting, evaluating, and disseminating occupational education research both intra-state and inter-state.

Most of the research, I might add, has been of a very practical nature and can be readily disseminated to the people concerned with its implications. We've heard rumors that one reason that 4(c) funds have been cut has been due to the too high stress on theoretical research problems which are not geared closely enough to vocational education programs. If the progressively increased 4(a) funds we have been receiving are any indication, we must be hitting fairly close to some of the real problems in vocational education.

To quote Dr. Robertson, our RCU Chief, "Our Bureau's unofficial motto is - 'In conducting vocational education research, keep your heart in vocational education or get yourself out of it.' "

Some of the general goals of the RCU fall into several main categories as follows:

1. To assume responsibility for the conducting of research projects for a broad range of studies which include the identification of the occupational education needs of youth and adults; the effectiveness of occupational information dissemination, evaluation of professional services and educational structures; the timeliness of present curriculums in occupational education; the identification of fields in which new curriculums should be developed.

2. To identify occupational education programs or problems in schools and two-year college programs which would be fertile areas for research, training, experimental, demonstration or pilot programs; to make preliminary contacts with these educational agencies and coordinate liaison for the necessary research to be carried out by these agencies, by the research staff of the State Education Department, or by universities and other private research organizations under contract to the State Education Department.

3. To provide consultative field services to educational agencies, both public and private, in the state in their development of occupational education research programs and projects for state or federal funding; assist these agencies in refining research techniques or research design and transmitting these proposals to the appropriate funding agencies.

4. To prepare materials for dissemination of the results of occupational education research, pilot, demonstration or experimental programs through summaries of research findings by making reports to professional meetings, by communicating with other branches of the State Education Department and through articles in professional journals.

5. To provide liaison in occupational education research stimulation on an inter-state basis cooperating with other state education departments, state universities and educational agencies on a concerted attack on timely and pertinent occupational education programs which have a regional rather than a statewide implication.

6. To provide upon request evaluation designs, techniques and field services to the office of Occupational Education and Manpower Resources as it becomes necessary to evaluate new programs and structures in the occupational education instruction program.

At this time, a selected reading of the last quarterly report to the USOE will give, I think, a little of the actual flavor of the operation of our RCU.

1. This RCU is a member of the Task Force on cooperative arrangements with the New York State Department of Labor, Division of Employment, and the New York State Education Department, Division of Pupil Services, Bureau of Guidance and the Bureau of Occupational Education Research. A meeting was held on August 14 where the representatives of the different agencies identified the employment and manpower needs of their respective bureaus. The purpose of this Task Force is to coordinate data on manpower needs concerning training and/or employment and for the pooling of information and services.

2. Discussion was held on a project entitled "Developing Educational Vocational Experience for Long-Term Occupational Adjustment of Parolees." The project is being conducted by the Executive Department, Division of Parole. A discussion with this RCU centered around the research development phases. In this case, the RCU is providing a consultative service to another state agency.

3. The RCU evaluated six Title I ESEA projects dealing with vocational education.

4. On August 5, Dr. Alan Robertson and Mr. Leonard Powell met with Dr. William Annis, Chairman of the Department of Agricultural Education at the University of New Hampshire to discuss the final stages of an inter-state research project which will result in a publication entitled "Guidelines for Establishing Secondary Vocational Programs in Ornamental Horticulture." Release and distribution of this publication is being planned for early fall.

5. The Director and an Associate of the RCU met with Mr. Smith, Associate Trainee Technician of the Municipal Police Training Council of the Executive Department, Office of Local Government, Albany. Mr. Smith sought consultation of the evaluation stages of a program prepared for police cadets and police trainees in the State of New York. The Director discussed several phases of the program where evaluation research could be performed.

6. Dr. Alan Robertson and Mr. Charles Meislin attended a meeting at Oswego, New York, on Thursday, August 11, concerning a 4(a) proposal aimed to develop and validate trade competency tests for selecting vocational instructors. Discussions were held with Dr. McMahon, Director of the Division of Vocational-Technical Education at Oswego with two psychology professors. References were cited and means were discussed to develop a criteria to determine the value of work experience and also to prove the validity of each of the test items which were developed in a teacher competency examination program written this past summer.

2.

MINUTES FOR THE REGIONAL RESEARCH CONFERENCE PLANNING COMMITTEE MEETING

The meeting was called to order by Dr. Gene M. Love, Chairman, Research Committee, Agricultural Division, American Vocational Association.

Dr. David F. Shontz was elected Chairman, Regional Research Conference for a three year period beginning July 1, 1967. Dr. Shontz will also serve as the Regional Representative on the AVA Agricultural Education Research Committee.

Cornell University was chosen as the site for the 1967 Regional Research Conference in Agricultural Education. The Conference tentatively accepted an invitation from the University of Maryland to host the 1968 Regional Research Conference in Agricultural Education.

The Conference passed a motion to urge the continuation of the publication, Summaries of Studies in Agricultural Education.

The conference group recommended that the chairman of the AVA Agricultural Education Research Committee be elected the Agricultural Education Representative on the AVA Research Committee.

It was announced that the AVA Agricultural Education Research Committee will sponsor a meeting on December 5 at 10:00 a.m. at the AVA Convention. The topic is, "Research in Vocational Education - Where are We and Where are We Going?"

The meeting was adjourned.

MINUTES OF THE AATEA MEETING

The meeting was called to order by Dr. Ralph Barwick, Alternate Vice President, AATEA.

Dr. Barwick noted the need to elect a Vice President for this Region of AATEA. After some discussion concerning whether the Conference was the proper time and place, and if the representation was adequate, Dr. David R. McClay moved to elect officers. The motion was seconded and passed.

Dr. Ralph Barwick was elected Vice President of the Region.

Dr. William H. Annis was elected Alternate Vice President of the Region.

The special meeting of AATEA was adjourned.

CONFERENCE PARTICIPANTS

Connecticut		
Dr. W. Howard Martin	Teacher Educator	University of Connecticut
Delaware		
Dr. Ralph P. Barwick	Teacher Educator	University of Delaware
Mr. Neal F. Warrington	Teacher Educator	University of Delaware
Maine		
Mr. Wallace H. Elliott	State Supervisor	State Dept. of Education
Maryland		
Dr. V. Ray Cardozier	Teacher Educator	University of Maryland
Mr. Robert Cobb	Teacher of Agriculture	North Harford High School
Dr. A. H. Krebs	Teacher Educator	University of Maryland
Massachusetts		
Dr. Philip Edgecomb	Teacher Educator	University of Massachusetts
New Hampshire		
Dr. William H. Annis	Teacher Educator	University of New Hampshire
New Jersey		
Mr. Daniel H. Adickes	Research Assistant	Rutgers - The State University
Mr. Paul Amaranto	Teacher of Agriculture	Bridgeton High School
Dr. Donald H. Amick	Assistant Dean Graduate School of Education	Rutgers - The State University
Mr. Martin Decker	Sec.-Tres.	NJVATA
Dr. Charles Drawbaugh	Teacher Educator	Rutgers - The State University
Mr. William Evans	Teacher Educator Emeritus	Rutgers - The State University
Mr. Edward Evaul	Graduate Student	Rutgers - The State University
Mrs. Susan Ford	Research Associate	Rutgers - The State University
Dr. Angelo Gillie	Teacher Educator	Rutgers - The State University
Dr. Jerald Griess	Teacher Educator	Rutgers - The State University
Mr. Ray Kienzle	Experiment Station Associate	Rutgers - The State University
D		
Dr. Ralph Locascio	Director, Occupational Research and Development Branch	State Dept. of Education
Mr. George Lange	State Director	State Dept. of Education
Dr. Walter A. Maclinn	Director, N.J. State Experiment Station	Rutgers - The State University
Mr. John Moullette	Teacher Educator	Rutgers - The State University
Mr. Wilmot Oliver	Director, Vocational Teacher Training	State Dept. of Education

New Jersey (continued)

Mr. Frederick Perlstein	Teacher of Agriculture	Altantic County School
Mr. Ralph A. Rush	Teacher Educator	Rutgers - The State University
Mr. Richard Shackelton	Graduate Assistant	Rutgers - The State University
Dr. Carl J. Schaefer	Chairman, Department of Voc.-Tech. Education	Rutgers - The State University
Mr. James Sheaffer	Graduate Student	Rutgers - The State University
Mr. William Smith	Teacher of Agriculture	Freehold Regional High School
Mr. Stephen Tucker	Graduate Student	Rutgers - The State University
Dr. Bruce Tuckman	Teacher Educator	Rutgers - The State University

New York

Dr. Joe P. Bail	Teacher Educator	Cornell University
Mr. Carl Beeman	Research Associate	Cornell University
Mr. Arsinio Gagni	Graduate Student	Cornell University
Mr. William Hamilton	Research Associate	Cornell University
Mr. Peter Harkness	Bureau of Occupational Research	State Dept. of Education
Dr. Charles W. Hill	Teacher Educator	Cornell University
Mr. William Helley	Research Associate	Cornell University
Dr. John K. Miller	Sr. Research Associate Dept. of Rural Education	Cornell University
Mr. Robert E. Norton	Graduate Assistant	Cornell University
Dr. Alan Robertson	Chief, Bureau of Occupational Education Research	Cornell University
Mr. George Robinson	Bureau of Occupational Research	State Dept. of Education
Dr. Fred Tom	Teacher Educator	Cornell University
Mr. Frank J. Wolff	Associate in Agricultural Education	State Dept. of Education

Ohio

Mr. James W. Hensel	Specialist in Agricultural Education	Center for Vocational-Technical Education

Pennsylvania

Mr. Robert T. Benson	Graduate Student	Penn State
Mr. William J. Brown	Teacher Educator	Penn State
Mr. Samuel M. Curtis	Teacher Educator	Penn State
Mr. Howard I. Downer	Graduate Assistant	Penn State
Dr. Thomas A. Hoerner	Teacher Educator	Penn State
Dr. Norman K. Hoover	Teacher Educator	Penn State
Mr. David L. Howell	Graduate Student	Penn State
Mr. Willie F. Jackson	Graduate Assistant	Penn State
Dr. Gene M. Love	Teacher Educator	Penn State
Dr. David R. McClay	Teacher Educator	Penn State
Mr. Donald E. McCreight	Graduate Assistant	Penn State

Pennsylvania (continued)

Dr. Ivan C. McGee	Educational Evaluation Advisor	Dept of Public Instruction
Mr. James F. McNamara	Research Assistant, Research Coordinating Unit	Dept of Public Instruction
Mr. Robert J. Mercer	Graduate Assistant	Penn State
Mr. N. Lawrence Miller	Graduate Assistant	Penn State
Mr. Robert D. Muzzi	Area Supervisor	Dept. of Public Instruction
Mr. Gerald H. Seiler	Graduate Assistant	Penn State
Dr. Jay Smink	Assistant Chief Research Coordinating Unit	Dept. of Public Instruction
Mr. Charles W. Smith	Graduate Assistant	Penn State
Mr. Richard W. Tenney	Graduate Assistant	Penn State
Mr. William Williams	Graduate Assistant	Penn State
Mr. T. Dean Witmer	Associate State Supervisor	Dept. of Public Instruction

Rhode Island

Mr. Ray Northrup	State Supervisor	Dept. of Education
Dr. David F. Shontz	Teacher Educator	University of Rhode Island

U.S. Office of Education

Mr. H. N. Hunsicker	Chief, Agricultural Education Service	Washington, D.C.
Dr. Otto Legg	Assistant Director, Program Planning and Development Branch	Washington, D.C.
Mr. Jesse A. Taft	Regional Field Rep.	Boston, Massachusetts
Dr. Philip Teske	Program Specialist, Ed. Res. Dev. Branch	Washington, D.C.

Vermont

Mr. Garry R. Bice	Teacher Educator	University of Vermont

West Virginia

Mr. Charles Rhodes	Research Assistant	University of West Virginia

Guests:

Mr. Robert Buzbee	Sears-Roebuck Foundation, Philadelphia, Pennsylvania
Mr. Gene Gister	Sears-Roebuck, Manager of New Brunswick Store